

ABSTRACT OF THE DISCLOSURE

A method of manufacturing diamond coatings, at low temperature and low pressure on a substrate utilizing chemical vapor transport (CVT) comprising the steps of: providing a wire-wrapped graphite assembly component and the substrate
5 into a chamber; filling the chamber with hydrogen; reducing ambient pressure in the chamber to a vacuum and backfilling with hydrogen; sealing the chamber containing hydrogen at a pressure less than 1 atmosphere; and passing electric current through the graphite rod until the substrate is heated within a range of 125°C – 750°C to produce high-quality diamond at temperatures with exceptional
10 properties.